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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/659,213

09/10/2003

Katsuhiko Miya

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OSTROLENK FABER GERB & SOFFEN
1180 AVENUE OF THE AMERICAS
NEW YORK, NY 100368403

EXAMINER

HECKERT, JASON MARK

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

09/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/659,213	Applicant(s) MIYA ET AL.	
	Examiner JASON HECKERT	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5, 10, 12-18, 23 and 28-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5, 14, 23 and 32 is/are allowed.
- 6) ☒ Claim(s) 10, 12, 13, 15-18, 23, 28-31 and 33-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/17/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/24/08 has been entered.

Response to Arguments

2. Due to the applicant's amendments to the claims, the previous rejections are rendered moot.

3. Additionally, the current amendments are not deemed to place the application in allowance. It is known to insert the process liquid passages into discharge tanks by the lifting mechanism (see '294). Additionally, the nesting of guard mechanisms is considered to be within the skill of one practicing the art. Newly cited reference '101 shows another conformation of nesting guards involving projecting portions, inclined portions, and a cylindrical part 30 that is located higher than the cylindrical portion of the outer guard (see figure 5).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 10, 12-13, 15-18 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 10, applicant claims, "a third cylindrical part branching outwardly from the second cylindrical part and extending vertically downwardly from the lower end of said inclined part..." This is NOT in agreement with the written description and figures. As seen in figure 1, the third cylindrical part branches out from the inclined part, not the second cylindrical part. Additionally, the third cylindrical part and the second cylindrical part do NOT both extend vertically downwardly from the lower end of the inclined part. One appears to extend vertically downward from the middle of the inclined part, and the other appears to extend vertically downward from the lower end. It is impossible to differentiate, from figure 1, the second cylindrical part from the third cylindrical part

6. Claims 28-36 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 28, applicant claims, "a fifth cylindrical part branching outwardly from the second cylindrical part and extending vertically downwardly from the lower end of said inclined part..." This is NOT in agreement with the written description and figures. As seen in figure 1, the third cylindrical part

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branches out from the inclined part, not the second cylindrical part. Additionally, the third cylindrical part and the second cylindrical part do NOT both extend vertically downwardly from the lower end of the inclined part. One appears to extend vertically downward from the middle of the inclined part, and the other appears to extend vertically downward from the lower end. It is impossible to differentiate, from figure 1, the second cylindrical part from the fifth cylindrical part

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 10, 12-13, 15-18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. In claim 10, part d-2, "said first processing liquid guide part" lacks antecedent basis. Please revise.

10. In claim 10, part d-2, it is impossible to determine which "outer guard" the applicant is referring to in the final paragraph of the claim (page 6 line 19). Two outer guards are positively recited. Please revise.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Japanese Patent Application Laid-Open No. 11-87294 ('294) in view of Okuda et al. (Okuda) and Japanese Patent Application Laid-Open 2000-183010 ('010). Sumnitch discloses the components of a substrate processing apparatus comprising a substrate holding part 10, a rotary part 7, a liquid supply 42 with conduits 44 and 45, a plurality of guide parts 36-38, a plurality of guide passages 39-41, a position adjusting part as indicated by 22, wherein the multiple guide/recovery parts are stacked. Sumnitch also discloses that the processing liquids can consist of a rinse agent, such as water, and chemical agents, such as acids. These features are not exclusive to Sumnitch and are well known in the art. '294 is an example of another substrate processing apparatus that has similar components. Sumnitch does not disclose the distinct structure of the guide parts of the claimed invention. Liquid guide parts, or cups, are well known in the art to capture the liquid flying from the substrate. It would be obvious to implement any of the many known styles of guide part since they are functional equivalents. '294 discloses the use of a guide part that extends obliquely upward toward the substrate holder as well as liquid guide passages formed between adjacent guide parts. '294 also discloses a cylindrical portion branching off of an inclined portion, corresponding to the applicant's third cylindrical part. See figure 7. In regards to claim 10, the guide parts do form passages corresponding to the overlying guide parts. For example, part 31a corresponds to fluid outlet 27a, but also forms the part of the guide corresponding to outlet 27b. Also, 31a is over a cylindrical part that forms passages 24a and 24b. '294 also shows that the liquid passages are slidably

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inserted by the lifting mechanism into tanks formed by partition members 22a, 22b, 22c, and 22d. However, '294 does not disclose a projected part extending obliquely upward toward the holding part. Okuda discloses a cup 3 of substantial annular shape, having a projected part projecting obliquely upward toward a holding part from a first cylindrical part and an inclined part extending obliquely downward toward said holding part from said first cylindrical part. Thus, a cup of the claimed shape was known at the time of the invention. Additionally, the nesting of guard mechanisms is considered to be within the skill of one practicing the art. '101 shows another conformation of nesting guards involving projecting portions, inclined portions, and a cylindrical part 30 that is located higher than the cylindrical portion of the outer guard (see figure 5). It would have been obvious, at the time of the invention to modify Sumnitch, and include the guide parts of '294, as they enable selective recovery of fluids by associating a specific guide part with a specific fluid passage. Additionally, it would have been obvious to further modify Sumnitch in view of '294, and include enclosing guide parts (cups), as disclosed by Okuda et al. and '010 in order to recover fluids. The claimed elements were known in the prior art and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

12. In regards to claims 12 - 13, '294 clearly shows annular first recovery tanks and a plurality of pipes leaving the tanks. Sumnitch discloses annular first recovery tanks connected to storage tanks as well as a discharge pipe 48 discarding waste material from the first recovery tank. Neither Sumnitch, nor Okuda, nor '294 disclose annular storage tanks. Changes in shape or form have been held to be obvious. *In re Dailey*

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149 USPQ 47, 50 (CCPA 1966). Sumnitch discloses the use of a storage tank. A mere change in the shape of the storage tank cannot be considered patentable, as the storage tank still performs the intended function of storing material.

13. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of '294 in view of Okuda and further in view of Miya et al. None of the above references teach a discharge nozzle shooting water in the vicinity of the substrate holder. Miya et al., disclose a substrate treating apparatus that has nozzles 52 for shooting solution (rinse or chemical) in the vicinity of the substrate holder. In order to deliver such solution, the nozzle must be in fluid connection with a liquid source via some sort of piping or liquid passage. Furthermore, flexible piping is notoriously well known in the art. Miya et al. disclose the device in order to spray solution at the back of the wafer, yet the device is fully capable of delivering solution to a rotary chuck that does not have holes for cleaning purposes. It would have been obvious at the time of the invention, to modify Sumnitch as stated above, and further include a nozzle, as disclosed by Miya et al., to shoot water in the vicinity of the substrate holder.

14. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of '294 in view of Okuda and further and further in view of Ono et al. As stated previously, Sumnitch discloses many of the features common to substrate processing apparatuses throughout the art. However, he does not disclose a four stage splash guard or a lifting mechanism. Ono et al. discloses a four stage splash guard 3 that can be raised or lowered. This feature is not exclusive to Ono et al., and can be found throughout the art. In regards to the second guard being curved, changes in

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shape or form have been held to be obvious. *In re Dailey* 149 USPQ 47, 50 (CCPA 1966). The prior art teaches all of the limitations of the guards and guides as claimed, and the mere change of shape is not considered to be patentably distinct. It would have been obvious to modify Sumnitch in view of '294 and Okuda, as stated above and further include a fourth guard and mobilize the guards in a vertical direction, as disclosed by Ono et al., in order to allow for the introduction of a fourth fluid and allow for simple interchangeability of the guide parts.

15. In regards to claims 30-31, '294 clearly shows annular first recovery tanks and a plurality of pipes leaving the tanks. Sumnitch discloses annular first recovery tanks connected to storage tanks as well as a discharge pipe 48 discarding waste material from the first recovery tank. Neither Sumnitch, Okuda, nor '294 disclose annular storage tanks. Changes in shape or form have been held to be obvious. *In re Dailey* 149 USPQ 47, 50 (CCPA 1966). Sumnitch discloses the use of a storage tank. A mere change in the shape of the storage tank cannot be considered patentable, as the storage tank still performs the intended function of storing material.

16. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of '294 in view of Okuda in view of Ono et al. and further in view of Miya et al. None of the above references teach a discharge nozzle shooting water in the vicinity of the substrate holder. Miya et al., disclose a substrate treating apparatus that has nozzles 52 for shooting solution (rinse or chemical) in the vicinity of the substrate holder. In order to deliver such solution, the nozzle must be in fluid connection with a liquid source via some sort of piping or liquid passage. Furthermore,

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flexible piping is notoriously well known in the art. Miya et al. disclose the device in order to spray solution at the back of the wafer, yet the device is fully capable of delivering solution to a rotary chuck that does not have holes for cleaning purposes. It would have been obvious at the time of the invention, to modify Sumnitch as stated above, and further include a nozzle, as disclosed by Miya et al., to shoot water in the vicinity of the substrate holder.

Allowable Subject Matter

17. Claims 5, 14, 23, and 32 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON HECKERT whose telephone number is (571)272-2702. The examiner can normally be reached on Mon. to Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art
Unit 1792

JMH